

REMARKS/ARGUMENTS

In the specification, the paragraphs [0019] and [0025] are amended to correct minor editorial problems. The Abstract is also amended to reduce the number of words. Claim 1 remains in the application.

Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and discussion below.

The examiner objected to the length of the Abstract and use of the word "means" therein. Accordingly, the Abstract has been shortened to comply with the 150 maximum word requirement and "means" has been removed.

Claim 1 is rejected under 35 U.S.C. 102 as being anticipated by U.S. Patent No. 5,666,692 to Toledo. The examiner states that Toledo discloses an adjustable closure comprising a housing (a distal dampening section at 34, 36 and a proximal mechanical section at 76) having a first closed end (40) and an [sp] open second end (76) and defining an interior cavity including a cylindrical recess spaced from the first end of the housing, a spindle (72) journaled in the housing adjacent the first end of the housing for rotation about an axis, at least a portion of the spindle extending from the housing (Fig. 3) and adapted to be connected to turn with the door; a cam (70) carried about the axis through an arc in a first direction from a by the spindle for rotation with the spindle first angular orientation corresponding to the closed position of the door to a second angular orientation corresponding to an open position of the door and about the axis through an arc in an opposite direction from the second angular orientation to the first angular orientation, wherein rotation of the cam from the first angular orientation to the second angular orientation corresponds to movement of the door in the opening direction and rotation of the cam from the second angular orientation to the first angular orientation corresponds to movement of the door in the closing direction, a slide assembly (62) including a cam following roller (74) for cooperating with the cam for converting cam into linear movement of the slide rotation of the assembly relative to the housing, a piston (30, 32) having a first end and a second end, the piston slidably disposed in the cylindrical recess, a piston rod (42, 44) connected at one end to the first end of the piston and at the other end to the slide assembly; spring means (48, 50) disposed (between the mechanical section and the dampening section) outside of the housing for urging the piston, the slide assembly and the cam in the door closing direction, the spring means including a spring rod (54) connected at one end to the second end of the piston; first and second annular plugs (38,39 & 46) disposed in the housing adjacent the ends of the cylindrical recess for slidably sealingly receiving the piston rod and the spring rod, respectively, the first and second annular plugs and piston dividing the cylindrical recess into a first chamber between the first annular plug (46) and the first end (30a, 32a) of the piston and a second chamber between the second annular plug (38, 39) and the second end (30c, 32c) of the piston, passage means (94, 96) defined in the housing for permitting flow of fluid between the cylindrical recess and the space of the cavity defined between the first annular plug and the closed end of the housing in response to reciprocation of the piston in the cylindrical recess, wherein upon rotation of the spindle and cam in the door opening direction the cam operates against the cam following roller for moving the slide assembly toward the first end of the housing and the piston toward the first end of the cylindrical recess and compressing the spring means for storing energy, the spring means urging the piston toward the second end of the cylindrical recess for moving the slide assembly toward

the second end of the housing and the cam following roller against the cam to rotate the cam and the spindle in the door closing direction.

The Applicant respectfully submits that claim 1 patentably distinguishes from the above reference. Claim 1 defines a door closer comprising a housing accommodating a spindle, a cam carried by the spindle for rotation with the spindle, a slide assembly cooperating with the cam for converting rotation of the cam into linear movement of the slide assembly, and a piston connected through a piston rod to the slide assembly. Claim 1 further recites spring means disposed outside of the housing and connected through a spring rod to the piston for urging the piston, the slide assembly and the cam in the door closing direction.

Placing a spring means outside of the door closer housing, as presently claimed, is neither taught nor suggested by Toledo.

The Toledo patent is directed to a conventional door closer wherein all of the operative elements of the door closer are inside the housing and immersed in hydraulic fluid. As described in the Background of the present application, this arrangement necessitates the use of fluid seals in an effort to prevent leakage. The examiner's statement that the Toledo spring means is disposed outside of the housing is incorrect, which can be determined from a review of the drawings and description. For example, FIG. 2 shows that the housing is open from end to end. Further, the description of the operation of the Toledo door closer teaches movement of oil under pressure between the back side 30a, 32a of the pistons and the front side of the pistons 30c, 32c. In particular, during closing of the door, oil is forced from the front side 30c, 32c of the pistons through an annular channel 82 around the adjusting screw 54 and into the housing 40 on the back side 30a, 32a of the pistons.

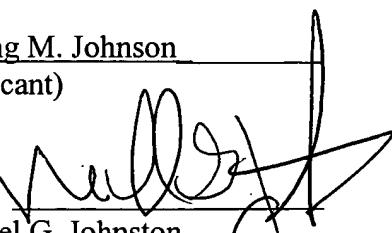
Therefore, Toledo does not disclose spring means outside of the housing as presently claimed. Since Toledo fails to show each and every element of the presently claimed invention, Toledo cannot anticipate claim 1. Moreover, placing the claimed spring means outside of the housing contributes significantly to the goal of minimizing the number of door closer elements immersed in fluid medium and thereby reduces the problem of preventing leakage. The prior art fails to recognize, and thus realize, the advantages which the Applicant has achieved in his invention by placing the spring means outside of the housing.

For the foregoing reasons, the Applicant respectfully submits that the door closer claimed in the present application is not anticipated nor fairly taught or suggested by any of the references cited by the Examiner, either alone or in any reasonable combination suggested by the prior art. Reconsideration and withdrawal of the rejections and allowance of the application at an early date are respectfully requested.

If the Examiner has any questions about the present Amendment or anticipates finally rejecting any claim of the present application, a telephone interview is requested.

Respectfully submitted,

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